STATE OF NEBRASKA

Dave Heineman
Governor

STATE FIRE MARSHAL
John Falgione
Fire Marshal

KITCHEN HOOD INSTALLATION

The National Fire Protection Association (NFPA) publishes a standard on the installation of kitchen rangehoods and fire suppression systems. NFPA 96, *Ventilation Control and Fire Protection of Commercial Cooking Operations*, (2001) lists specific requirements for kitchen hoods. The State Fire Marshal's Office has enforced a version of this standard for over twenty years.

Among the requirements are details for the placement of hoods and ventilation ducts in relation to building components. Hoods and ducts must maintain specific clearances from materials deemed combustible or limited combustible. Hoods, ducts and exhaust fans must maintain a clearance of 18 inches from combustible materials, 3 inches from limited combustible materials, and zero clearance from noncombustible materials.

Examples of typical construction materials and their combustibility are:

Drywall on wood studs or joists=combustible	18-inch clearance
Fibrous lay-in ceiling tile=combustible	18-inch clearance
Drywall on metal studs=limited combustible	3-inch clearance
2 inches of drywall (on wood or metal)=limited combustible	3-inch clearance
Brick, clay tile or CMU=noncombustible	0-inch clearance

See Table A3.3.34 for more examples-Attached

Minimum clearances can be reduced by using a product specifically listed for that purpose. The clearances and installation instructions must be followed as specified by the manufacturer.

Clearance can be reduced to 9 inches when 28-gauge sheet metal, spaced out 1 inch from the nearest surface (wall, ceiling) is installed behind the duct or hood. Clearance can be reduced to 3 inches when 22-gauge sheet metal on 1-inch mineral wool bats or a ceramic fiber blanket reinforced with wire mesh or equivalent, spaced out 1 inch from the nearest surface is installed behind the duct or hood.

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☐ **MAIN OFFICE**
☐ **DISTRICT A**
246 South 14th Street
Lincoln, NE 68508-1804
(402) 471- 2027

☐ **DISTRICT B**
438 West Market
Albion, NE 68620-1241
(402-395-2164

☐ **DISTRICT C**
200 South Silber
North Platte, NE 69101-4219
(308) 535-8181

Fuels Division
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246 South 14th Street
Lincoln, NE 68508-1804
(402) 471-9465

☐ **TRAINING DIVISION**
2410 North Wheeler Avenue
Suite 112
Grand Island, NE 68801-2376
(308) 385-6892

The previous information applies to ducts that do not penetrate fire rated wall, floor, ceiling or roof assemblies. When ducts penetrate fire rated assemblies, an approved enclosure must be provided. The enclosure must be continuous from the point where the fire rated assembly is penetrated to the exterior. The enclosure must be 1-hour fire rated when penetrating a 1-hour assembly or when the duct is installed in a building up to 4 stories in height. The enclosure must be 2-hour fire rated when penetrating 2-hour assemblies or when the duct is installed in a building over 4 stories in height.

Field-applied grease duct enclosures, factory-built enclosures and other duct protection systems such as duct wraps are acceptable when specifically listed for the use. Documentation of the material, its installation requirements and listing information must be available for review and approval.

Ducts must also maintain a clearance from duct enclosures. Specifically listed duct protection systems must maintain a clearance as required by the listing and the manufacturer's instructions. Nonlisted enclosures must follow the clearance requirements below.

If the enclosure is made of combustible materials, i.e. drywall on wood, a clearance of 18 inches must be provided from the duct to the combustible material. Clearance from the duct to an enclosure of limited combustible or noncombustible materials is 6 inches. The clearance reductions methods specified on page 1 cannot be applied to duct enclosures.

Rangehoods and ducts represent a distinct hazard that must be respected. By following the requirements of NFPA 96, an acceptable degree of safety is provided.

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☐ **DISTRICT A**
246 South 14th Street
Lincoln, NE 68508-1804
(402) 471- 2027

☐ **DISTRICT B**
438 West Market
Albion, NE 68620-1241
(402-395-2164

☐ **DISTRICT C**
200 South Silber
North Platte, NE 69101-4219
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☐ **FLST** ☐ **Pipeline**
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2410 North Wheeler Avenue
Suite 112
Grand Island, NE 68801-2376
(308) 385-6892

Table A.3.3.35 Types of Construction Assemblies Containing Noncombustible, Limited-Combustible, and Combustible Materials

Type of Assembly	Classifications for Determining Hood and Grease Duct Clearance*		
	Non-combustible	Limited-Combustible	Combustible
Wall assemblies			
Brick, clay tile, or concrete masonry products	X		
Plaster, ceramic, or quarry tile on brick, clay tile, or concrete masonry products	X		
Plaster on metal lath on metal studs	X		
Gypsum board on metal studs		X	
Solid gypsum board†		X	
Plaster on wood or metal lath on wood studs			X
Gypsum board on wood studs			X
Plywood or other wood sheathing on wood or metal studs			X
Floor–ceiling or roof–ceiling assemblies			
Plaster applied directly to underside of concrete slab	X		
Suspended membrane ceiling			
With noncombustible mineral wool acoustical material	X		
With combustible fibrous tile			X
Gypsum board on steel joists beneath concrete slab		X	
Gypsum board on wood joists			X

Notes:

(1) Wall assembly descriptions assume same facing material on both sides of studs.

(2) Categories are not changed by use of fire retardant–treated wood products.

(3) Categories are not changed by use of Type X gypsum board.

(4) See definitions of *Combustible*, *Limited-Combustible*, and *Noncombustible* under 3.3.35 in Chapter 3.

*See clearance requirements in Section 4.2.

†Solid gypsum walls and partitions, 50.8 mm (2 in.) or 57.15 mm (2¼ in.) thickness, are described in *Fire Resistance Design Manual*, published by the Gypsum Association, Washington, DC.

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☐ **DISTRICT A**
246 South 14th Street
Lincoln, NE 68508-1804
(402) 471- 2027

☐ **DISTRICT B**
438 West Market
Albion, NE 68620-1241
(402-395-2164

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200 South Silber
North Platte, NE 69101-4219
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Suite 112
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